

# Home Computing WEEKLY

An Aspen Specialist Publications

June 28-July 4, 1983 No. 17 39p



**Make more of  
your ZX81 —  
see page 14**

**Software  
reviews for:  
TI-99/4A,  
Dragon, Oric-1,  
Jupiter Ace,  
Spectrum, ZX81,  
Commodore 64,  
VIC-20**

**Programs to  
type in for  
TI-99/4A,  
Dragon**

**Computer Fair:  
Special report**

**Pages of news**

**Your letters**

**Best sellers:  
charts for  
VIC-20, ZX81,  
Spectrum,  
Dragon**

**Behind the  
scenes at Rabbit**  
**PLUS: U.S. scene  
and One Man's  
View**

## WHICH MICROS WILL SURVIVE THE HIGH STREET?

NEW computers are flooding into the country — eight were announced in the last few days. But how many will reach the shelves of the high street stores?

W.H. Smith has already decided to add three to its range — three machines are being kept open for now — and Books is due to make a decision in the next few weeks.

To face merchandise controller Stewart Wilson, who has worked at Smiths for seven years, and he was watching the performance of two of the company's present ranges, but for definite reasons.

He wanted to see the reaction to the D10 price cut for the Commodore 64, bringing it down to £229. It could go into next store.

And he said: "We will have to see how the Computer Store goes over the next two-three months — it's been rather caught short by the recent rise of price cuts."

Mr. Wilson pointed out: "Computers are very interesting in their use of more space. Anything that does not perform and more will be replaced by one that will."

Smiths is present stock the ZX81, both Spectrum models, the Commodore 64 and the Oric. In the company's store test computer, since sales are slow there will be a range of eight or ten computers.

And he believed that the ZX81, now just under £40, was well placed for Christmas, despite its black and white display. "It's gone through a trial it's a good way of getting started."

Mr. Wilson said Smiths

bought no detailed market research before considering which machines to consider and then took account of all the price arguments.

He said: "The problem is that time and fully are better experts and these are when you have to make up your mind for Christmas."

*Continued on page 2*

**New  
computers  
— full  
details,  
plus  
pictures,  
inside**

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*Continued from front page*

"What makes us different from the independent retailer is that we operate as large as W H Smith has to have a very close view of the market."

"I see hardware being subject to further increases all summer in the next few months and the market is so competitive that retailers are at each other's throats."

Mr. Foster is expecting a bumper Christmas in computer sales — perhaps as much as double over last Christmas.

Heard "I've seen increases of one to one-and-a-half million units being sold in H&M — half of them in the last four months, including January."

How does Foster decide which computers to stock? Merchandise controller Anton Boyer said: "The decision is not dependent on whether we had a new theme."

"The first thing is whether it appears to be an innovation and offers good value for money."

"Then we look at it in detail with a technical evaluation for performance and safety — that's critically important — and whether it does what it says it will do."

"Sometimes you see things in a trade show and it seems odd that they are prototypes."

"We look at how the manufacturers are going to promote the computer and then finally write it out as the range of our coming products."

"It would be unlikely that we would stock a microcomputer which did the same for the same price, although it may be we would have two at around the £750 mark."

"I must say the decision on Christmas systems is based, that Christmas is one of the most difficult we have had to make. We are not committed to any of the systems, but we will be making a choice soon."

"I've never known anything like the market at present. It's weirdly it's critical that we pick the right product, especially at

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Software Supermarket

*Continued from column 1*

there are going to be many more products and more people willing than this Christmas."

Books include the Spectrum, ZX81, Dragon, VIC-20 and Commodore 64 in 170 pages and a soon adding the BBC micro-Before Christmas, 250 thousands of books will be stocking computers.

How do the independent-retailer? Andrew Magdoff, of Lion House, which has stores in London and Brighton, said: "It's as difficult for us to decide what to sell as it is for the customer to decide what to buy."

"The home computer market is underdeveloped — it's what people consider and what to buy. When someone comes out it's difficult to persuade them to buy something other than a Commodore or BBC, if that's what they want as for."

"To take a particular line you have got to invest money in stock and training and work on a full-time basis if it is successful."

"We can't hope something in the same way as the big retail chains."

At least one new computer — possibly two — may make an appearance on the shelves of John Menzies stores.

Mark Gregory, the company's product manager for computers, said the decision would be made in the next week, or so from the machines the company had already ordered. But there may also be some sales in an existing inventory, he said.

The company took their store into account: memory size, graphics and colour, major issues, accessories, support and prices from the market and publications — list books and magazines.

He said: "We take into account not only the box but what happens when the box is on the market."

John Menzies stocks computers in 300 shops and stores 25 hours a week range — ZX81, Spectrum, Dragon, One, Atari and VIC-20.



## Fair deal from fairs

The Computer Trades Association has put out a badly-argued badly-publicised "tip-off" computer fair.

According to the Association's general secretary Nigel Blackburn, "our members realise that there are about a third-to-many exhibitors taking place at the moment."

"They get bombarded with invitations to show their products at exhibitions, and there's no way they have time to check them all out. My own business had mail alone for five different exhibitions only last week, — and it an average week we get at least a couple."

To help its members decide which fair's best, the association is in the process of compiling an Exhibitions Approval List. Exhibitors will have to meet certain basic standards to get on to the list.

Nigel Blackburn said, "The standards aren't rigid — we'll assess each exhibition with common sense. You can't compare local markets with big events like the Earls Court Fair."

"But the sort of thing we'll be looking for is whether there's adequate publicity, adequate security and safeguards for exhibitors, and whether there's an advisory committee to settle any exhibitor's views into account."

"It's also important that exhibitors should be based at the right market — there's a general feeling that too many exhibitors try to rent their markets. People don't know if they're home com-



Voluum's new Delta 14 BBC keyboard

puter, business computer or general exhibition."

Many of the exhibitors are small firms, although he said members were being advised not to exhibit at one show run by a large company.

The CTA now has 810 members. Dragon Data joined on June 28, and Boco is alone, you Mr Blackburn stressed.

Mr Blackburn stressed, however, that the CTA was not ordering its members to boycott non-approved events. The approved list would simply be a recommendation.

The list will be divided into four categories: trade only exhibitions, public (business), public/home/leisure, and public (general). The first edition will be published in September, with monthly updates appearing along with the Association's newsletter.

Members of the public will be able to get copies of the list by sending a stamped addressed envelope to Nigel Blackburn, Computer Trade Association, 101 Margaret Street, Coventry, CV4 6EP.

## Computer comic

Britain's first computer comic has just been launched. Called Lord Kismet, it appears fortnightly with a mixture of comic strips, feature stories and computer facts for the nine-16 age range.

Editor Bill Scolding will be in with us to entertain as well as educate.

Lord Kismet, 26-27 Margaret Street, London W1 8EP.

## Push-button games

You won't have to wait out your BBC computer keyboard by using it for games playing, if Voluum's Delta 14 keyboard can show you.

The keyboard substitutes a control and memory-duty keypad which, according to Voluum's sales director Tony Parsons, is "designed to relieve pressure, such as is experienced when it's used

by excited children playing games."

As well as saving your keyboard for programming, Voluum says that the keypad will make it easier to control games which can several keys.

A single button can be plugged directly into the A/D port at the back of the BBC micro, and used just like an ordinary joystick. Or two buttons can be plugged into an adaptor which allows the keypad to be used.

At the moment, of course you won't be able to use the keypad with existing BBC software. Voluum is busy trying to talk BBC programmers into writing optional keypad control into their future games — as well as routines that will transfer existing software to the keypad.

The keyboard alone cost £18.95 each, and the adaptor has costs £19.95.

Voluum, Port Drive, Redditch, Wore. CV7 6BB.

## Fantasia fiasco

Brian Bower was worried when he read in Home Computing Weekly that tape swap company Computerhouse was to acquire software subsidiary called Fantasia.

Brian Bower's own software company, which has been around for a year now, is called Digital Fantasia — but it has nothing to do with Computerhouse.

"The names really are pretty similar", Brian said. "I just hope people don't get the two companies confused. It's to writing to Mr Martin pointing out that we already operate under the name Fantasia."

Digital Fantasia's forte is machine-made adventures for the BBC. Called the Mysteries Adventures series, the games were all written by Brian Bower. But writing no more, Brian hopes to release the whole series for the BBC Spectrum.

Digital Fantasia, 24 Newfield Road, Mirkwood, Leno.

## Power with stability

Disturbed by mass voltage disturbances? Bored out by brownout and screen drift? It's important to you to ensure that your micro gets a stable power supply, then Comstat has a range of power stabilisers that may do the trick.

Called the Regulator 2 range, they start at £119.25 for a model designed to handle C20A, C2000, Modulator Anal, Standard Ablog, Four Bits 8012 802.

## More high street micros

W&L Smith is opening pilot computer shops within shops on Friday at 11 Birmingham, Craydon and Northampton towns.

As revealed at Home Computing Weekly, they will be the centres for a planned network of such shops country-wide.

Each will have console units where prospective customers can try computers such as Maria's new Aquarius, the BBC micro, Cere-1, Commodore 64, VIC 60, and Spectrum.

W & L Smith, Speed House, 10 Nine Peter Lane, London EC4A 3AD.





## Cutting remarks

It may seem a little strange that regularly, but it is not. As it read a letter from a customer recently who was not very pleased as the current price of being war in the microcomputer market.

What kind of fool is he? Doesn't he realise that prices cutting war benefits everyone, and prevents the market from getting stagnant?

A good example of a stagnant market is the one for Atari 400/800 software. A good program will cost you £60. A bad one will be about £10 cheaper. Yet does anyone seriously believe that the programming skills used to produce an 80 Spectra program are any less than those used for Atari programs?

For better reason, people seem to think they can charge the earth for any Atari programs. Presumably this is because Atari themselves have no mind.

We've all heard the unending rumours about the ZX81 only costing £10 build, or the Commodore 64 costing less than the VIC 20, surely are people so taken with the price tag of laptops, investments? I'm certainly not. Let better comments! See *McLaughlin, Midlandborough, Cleveland*

★ Software warrior

## Munch Maze amendments

I am the owner of a VIC 20. I was very pleased to see the Munch Maze game in *HCW 9* — it ran very well with great graphics.

But I don't like the two-part format, so I loaded and ran the first part, then without *MBWing* or I loading the second part, and the game still worked.

First I decided to make it more comfortable for the user by giving the computer to load part two. If you use the following amendments when you load and run *Munch Maze*, the second part loads automatically.

83 Poles 34478,27: Poles  
" C L B  
LOAD" + C3480314 + " Munch  
Maze Part 2" + C3480314 + "

84 Poles " & variable  
some BLU?"

And add the following line to Poles 798,3: Poles 403,35:  
Poles 404,13: Poles 404,13  
Austin Cabard, Slough, Kent

**Send your letter to Letters, Home Computing Weekly, 145 Charing Cross Road, London WC2H 9DE. Don't forget to name your computer — the best letter could win £5 worth of software. Queries cannot be answered on this page**



## Hands off the dragon

Who does he think he is? I am of course talking about your reviewer H W, who chose to walk the path of the Knight's Quest in *HCW 13*. As soon as he found the dragon, he killed it. What's more, he boasted that it was easy.

Well, of course it was easy to kill the dragon, as it was expecting to be fed, not killed. If H W had taken heed of the instructions at the start of his quest, he would have read that dragons are not made to eat what they are dead — silly boy.

Although it is commonly believed that the only good dragon is a dead one, it just isn't true in that case. H W would have hoped that he could not shoot the game or loaded the ferry or even use his stock of spells without the dragon as his friend.

Obviously H W is a novice adventurer, and can be forgiven his dragon slaying that didn't let it happen again.

One final word. The where start must have each task completed before the next can be attempted, unless some which let you progress to the next stage, only to tell you that you have not got the correct equipment. T. Knap, Norwich, Norfolk

## Spectrum user club

I haven't seen any Spectrum User Clubs anywhere, so I've decided to start my own with the help of a friend of mine.

It will cost £4.00 a year, and so that your members will receive the costs of our magazine — one every two months. Mark Burnett, 34 Grosvenor Drive, Hemmell, Merd, Essex

## It isn't microfair

Why do why in there never a microfair in Scotland? The fair in England are similar every town to get to. What's wrong with an Edinburgh Microfair in even a Glasgow microfair?

If anyone reading this letter answer to this mystery, perhaps they'd write to and let us all know.

M. Logan, Hawick, Scotland



## Microdrive shaped like a credit card

Right now, the information is either uncertain, but the situation will change in the next few months. Look for the upcoming anti-Chinese law. I will keep you posted on price, availability, and quality.



behind and under the F1 name comes the digitalis. The common dance moves possible: none recognized and speech synthesis for F1's mouth. F104. They use a 64-pin microcontroller chip and has a slot for inserting game cartridges. It includes a three-axis joystick and combination of buttons, microphone and for game input and output. An accompanying joystick controller has three buttons which can be used for controlling several functions. See page 102.

[illegible]

There is a need for a more comprehensive approach to the study of the social and cultural context of the family, and a more integrated approach to the study of the family and the individual.

**Wiederholungsfragen:**

1. Was ist die Bedeutung der Wiederholungsfragen?

2. Wie werden die Wiederholungsfragen gestellt?

3. Wie werden die Wiederholungsfragen beantwortet?

Approved by W. M. Smith, Agent in Charge, and  
Special Agent

Computed by Roots. Figures in brackets are last used positions.

Computed by Moore. Figures in brackets are last week's average.

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above a percentage.

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## Lunar Lander TI-99/4A £8

Stratton Software, 19 Albion Road, Stockton, Cheshire, SK4 5AB

A version of the arcade game in which you must safely land on a valley, avoiding the rocky mountainsides. You have the choice of five rockets each becoming more formidable as the level progresses. When you finally come down to Earth, which is the most difficult, there is the additional hazard of a lake.

The keyboard is used to control your descent to the sea and variable thrust of your lander. These require careful and constant adjustments. Instructions

readings are displayed at the top of the screen.

The action is slow — a limitation of any program written in TI Basic — but this is no very serious fault in the game. The most experienced player can turn the readings off thereby speeding everything up.

Two minor points are that the Y character has been incorrectly assigned to a blue block, and poor navigators might decipher parts of readings.

instructions	80%
playability	70%
graphics	70%
value for money	70%

★ ★ ★

## Starjammer Dragon + Joystick £7.95

Stratton, Dept. C, 27 Oakley Road, Brighton BN4 4QJ

Here we have a very colourful space dogfight by Franklin Freeman by the way for reality. You are on to destroy an alien alien invading our solar galaxy.

Your laser sight is in the corner of the screen and you turn the turret into this with your joystick. A nice handling effect is produced with the stars although larger heavenly bodies remain stationary.

A limited amount of strategy,

reflected in the bottom of the screen, protects you from enemy fire at a distance. If you're slow this is soon used up, even though you do have three lives.

The explosions are terrific and the graphics, representation of enemy fighter and background, quite good. At the end of each game there's a Roll of Honour to enter up to 16 high scores — essential to my competitive family.

instructions	80%
playability	80%
graphics	80%
value for money	85%

★ ★ ★ ★

## Oric Trek Oric-1 48K £9.95

Stratton, Dept. C, 27 Oakley Road, Brighton BN4 4QJ

It's just one of those that is old when out of all space good games. The Starjammer is similar to this for space and you wish your joystick to move your own ship as it is seen from orbit.

The galaxy has regions and Nebulae, each of the Starjammer sport the latest in service better while others kept you informed of the news from Starfleet Command. The Starjammer is really done.

Another point also is the simulation ship control. It's a focus

in which you are represented for simulation and placed in command of a suitable warship ship. You can at least continue when you left off though.

The writer display is neat and pleasing to look at, but the sound is a bit weak, with too much reliance upon the Oric-1's pre-programmed tape.

Oric Trek is a real time game as there's no time saving over what is done — it's all as he said.

instructions	85%
playability	80%
graphics	85%
value for money	85%

★ ★ ★ ★

# Games that are out of this world

Or are they? Our reviewers  
beam down their opinions  
on a selection of space games

## Invaders Jupiter Ace £6.50

Hit Tech, 5 Malvern Drive, Whitfield, Dorset, Dorset

People wonder of the well-known arcade game. No colour, of a non-dedicated graphics, the invaders might not be the best defender's game merely a small degree.

The Invaders fall in slowly and slowly, the program might be well as the game is no very good and the destruction of the invaders.

If it were not for the fact that the Invaders are in the hands of the Invaders, they'd have been to the player who would have had up feeling very good.

The program was very difficult to find and some of the Invaders were in the hands of the Invaders, they'd have been to the player who would have had up feeling very good.

instructions	80%
playability	80%
graphics	80%
value for money	85%

C.M.





# Old favourites get a face-lift

These programs are all versions of traditional games, converted to play on your micro

## Scrabble 48K Spectrum £15.95

Paces, 2 Mortonside Way, Clonsilla Place, London NW9 1AD

Writing a home-computer version of Scrabble might seem like an unexciting, but Paces has got 30 per cent of the way there. Up to four players can play, and all or some of them can be the only player. There are level skills levels, hand bonus (for speed), and the program has an on level 1.

Besides all the permutations of players and skill levels, there are several other options, and

good graphics, and a booklet which explains both the game rules and the program's operation. Too easy for the real Scrabble player, perhaps, but for most of us a unique and fascinating program.

instructions 95%  
playability 90%  
graphics 95%  
value for money 95%

★★★★★

with a modified display of who is having a magnificent try.

Being able to see the players' letters makes it less of a puzzle to the computer's letters or not — and you can also watch it trying.

About 17,000 words are held in the program's dictionary — with a lot compared to the Oxford Dictionary, but pretty good for a Spectrum. Each time you enter a word it's checked against the list, and if no match is found, the computer asks "Are you sure about...?" Type in the word and when your word has to be a guess, the computer will check if you're right.

Besides great graphics, a



## Super Skill Hangman Dragon £7.95

Telestar Software, 17 Doughty Hill, Brighton BN1 4QJ

An excellent version of the traditional word game for one or two players.

The computer selects a word and randomly sets all a word about 60. If you guess the word or some you come a point, if you fail you lose a life. When you lose all the lives the game is over. The computer adjusts your skill level depending on how many guesses you take for each word.

There are three levels of help — first gives the first letter, then gives a random letter and then gives no help at all. The help means just that, and it is possible to hang the man by simply guessing the word wrong letter and over.

There is an option to play with the letter on. With this you have a 30-second time limit to guess each word.

instructions 95%  
playability 95%  
graphics 95%  
value for money 95%

★★★★★

## Backgammon 16K ZX81 £5.95

Paces, 2 Mortonside Way, Clonsilla Place, London NW9 1AD

For the ZX81, this is a brilliant game. It is played in a simple game style — not too complex, and even made made random draw my

then you want to play — the computer does the move. If you want to play, you can play. There's also a "double check" feature for those who like to play.

Four levels are offered, and on the simplest, the ZX81 can actually make a move which is a 1 through a 6. The other levels are more complex, but the computer has the ability of this in

The screen display is excellent and easy to see, with the playability of the game.

To make you just type in the move corresponding to the pos

instructions 95%  
playability 95%  
graphics 95%  
value for money 95%

★★★★★

## Othello 68K Oric 1 £6.50

Koreia, 1 Marlborough Drive, Woking, Surrey

Although the Othello game involves the capture of opponent's pieces by covering the opposite colour. The computer is the only move of your opponent on the board by the end of the game then your opponent, in this version you can play against a friend, against the computer, or even on the computer play itself.

My copy suffered from loading difficulties even though it was saved in 300 words, and despite several games per

couldn't obtain the file, the game is a masterpiece without creating a

The display is well laid out but I find the sound effects and a little overdone for a "chess" program. IAP, which provides pieces 1744 in the end of a game, and a ring code while the

On a challenge. The computer's thinking time is fast, peacefully slow, and it has the computer play itself with very good results. Luckily it has a sound effect which is very nice.

instructions 95%  
playability 95%  
graphics 95%  
value for money 95%

★★★★★



# ZX81 PROGRAMMING

Table 2 — *hex loader*

```
1 0000 .....
2 LET J=0:GOTO 14
3 INPUT Y
4 IF Y=0 THEN STOP
5 LET J=J+1:GOTO 14:Y=0:GOTO 14:Y=0
6 PRINT Y:GOTO 14:Y=0:GOTO 14:Y=0
7 LET J=J+1
8 GOTO 3
```

A DATA line can contain several words or numbers, each one is separated by a comma. Once you come to the end of a DATA line, READ will search for the next DATA statement and program. If you try to READ more data than you are processing, you should get a system error message. RESTORE occurs

## C=TALABTO RAND LINE READ

Data is stored in a special READ line. To differentiate it from a normal READ, READ is followed by a graphic shift A (CHRS A). The machine code routine recognizes this combination as a DATA command. Line 8009 (table 4) contains

concatenation of two together both the LIST command and following the end of the program has been studied.

You can list the rest of the program with LIST 1.

As a short example of how to use this routine, add the program lines in table 2 to those in table 1.

then RUN. After that, change the first data word in line 80 to 5. This will demonstrate how the "end of data" trap works.

Note that you can mix numeric and string data in one data line. Unlike the Spectrum, quite masks are not required for string data.

Table 3 — *an example of READ-DATA*

```
1000 LET CHANNEL=0:PRINT "THE READ"
1100 DIM D(4):C=10
1200 FOR I=0 TO 3
1300 LET D(I)=VAL(TO READ:LOW READ)
1400 PRINT D(I)
1500 NEXT I
1700 READ 3,ONE,TWO,THREE,FOUR,FIVE
```

Table 3 — *machine code hex listing*

76	76	00	00	00	00	21	04	40	73	23	74	23	36	00	09	20	04	40	39	06	40	A7	20
10	7E	FE	0A	26	00	23	10	F0	23	7E	FE	0A	26	3C	FE	00	20	0F	23	36	01	32	06
40	00	20	10	40	01	06	00	03	0E	3E	00	32	07	40	7E	FE	1A	20	13	FE	76	20	0A
60	00	05	21	07	40	34	E1	10	00	3E	00	32	06	40	23	22	04	40	00	00	21	07	40
46	C9	00	20	0C	40	01	F0	02	03	00	21	F0	40	01	13	00	ED	00	CD	00	40	13	20
00	34	30	30	00	24	20	00	20	26	30	26	00	20	37	37	34	37						

the data search "pointer" to the beginning of the program.

My routine works in much the same way (instead of some masks READ and RESTORE, numeric variables with these names are declared (Table 4) which hold the addresses of the appropriate machine code routines. RESTORE is masked by the program line

a ROM command followed by a control space character (CHRS 10). This allows the routine to recognize the end of the program. Should you try to READ more data than is present, the machine code routine recognizes the end of program routine, and prints the message 'OUT OF DATA ERROR' at the base of the screen.

An automatic RESTORE then occurs to prevent the program crashing.

The combination of CLEAR and DIM AS(0) in table 4 assures that AS is the first variable in the variable storage area of RAM.

The machine code depends on this, it uses AS as a temporary store. AS should be dimensioned to at least the length of the longest DATA line.

When you have entered the machine code, try LISTING the program. All you will get is a READ.

The rest of the program is masked. The reason for this is the first two bytes after the READ, they have the hex value 10, which is the NEWLINE character. The

Table 4 — *READ/RESTORE in machine code*

```
1 0000
2 01 CLEAR
3 02 DIM AS(255)
4 03 LET READ=10000
5 04 LET RESTORE=10000
6 05 READ:FOR RESTORE
7 06 GO
```

## RAND USE RESTORE

There are two versions of the READ command, one for numeric, and one for strings. Typical examples of these are listing 100 LET CS=INTO-RAND:LINE READ (numeric), 80 LET C=VALAS:GO:RAND:LINE READ



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## TI-99/4A PROGRAM

[illegible][illegible][illegible][illegible][illegible]

### 1994A PROGRAM

[illegible][illegible]

```

0000 00 0000 1000 1000
0005 00 0000 1000 2000
0010 0000 1
0020 0000 1000
0030 0000
0040 0000
0050 0000 1000
0060 0000 0001 0000
0070 0000 0001 0000
0080 0000 0000 0000
0090 0000 0000 0000
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0190 0000 0000 0000
0200 0000 0000 0000
0210 0000 0000 0000
0220 0000 0000 0000
0230 0000 0000 0000
0240 0000 0000 0000
0250 0000 0000 0000
0260 0000 0000 0000
0270 0000 0000 0000
0280 0000 0000 0000
0290 0000 0000 0000
0300 0000 0000 0000
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```

[illegible]

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# Something for everyone in the micros of '83

## The all-purpose micro?

Minemarch's MTA500, from a company best known for Z801 add-ons, is one of the heavyweights of the new bunch — at price as well as size and weight.

Due on sale in November at about \$270, it is being promoted as the all-purpose computer.

Starting from the outside, it is clad in black aluminum with a 74-key CP/M 2.2 keyboard with, in the right, 12 keys for numbers, cursor control and editing plus a function key. Non-definable function keys.

Inside is 128K of RAM — expandable to 512K — plus 140K of video-RAM. It can display 16-colors, and on a 40-column screen and graphics at 256 by 192 with moving non-definable graphics, or option.

Standard outputs are Commodore-type parallel port, two ports for peripherals, an asynchronous input-output port, 2400-baud serial port, separate ports for TV and monitor, three-voice sound with built-in speaker and a defined port for cartridges.

Optional expansions — with more planned — include 40-column color video board, two 40K 3.5" diskettes and 5 1/4" and 8" floppy disk interfaces to run CP/M, the operating system for much business software.

In the 140K ROM are Minemarch's BASIC, the LEXICO language used in education for upper and NOODLE, a language which makes question-and-answer programming simpler, according to Minemarch.

There is also an assembler/disassembler with a special screen display — controlled by the keyboard — of the storage functions of the computer's 240 processors, the memory and the program.

Microtar code can be stepped through one instruction at a time and called from BASIC.

Reset comes to an add-on ROM pack.

Minemarch is promising an



Gloria Davis, 26, with the Atari 520

line 10 arcade-style games at launch, four business programs, including a spreadsheet and word processor, the first run of a series of educational programs and four board games — chess, backgammon, Othello and draughts.

Financial manager Robin Tupper said the MTA500 production would be split with a third each going to America and Europe.

Minemarch, Sweden Line Industries' Europe, Milano, Ohio, USA.

## Atari's large-scale launch

Atari is now launching the first three four computers here, together with about 10 peripherals and accessories.

No price have yet been decided. All the new units will be compatible with existing software, they will have full typewriter-style keyboards and four main graphics modes to add to the present 10 which can be called from BASIC.

They are the 520 and 520

• The 800XL has 128K of RAM — expandable to 512K — built-in BASIC in the 140K ROM, four voices, 14 colors in a choice of 16 shades, help key, self-test device and cassette port.

• The 800XL is available, but with 64K of RAM is standard.

• The 1400XL has all the features of the 800XL, plus four function keys, a numeric interface — replacing the module in the 1/2 S model — and a built-in voice synthesizer controlled by English-like commands.

• The 1400XL has a range of the new range — the D mode for the 1400XL has a double-sided dual density drive for a 5 1/4" floppy disk. At the end of a storage compartment which can be easily replaced with a second drive.

The first two are due for possible release in the late autumn.

Among the new peripherals and accessories:

A four-color printer-plasma — using small halogen pens on a thin plate — similar to the models marketed by Tandy, Core and others.

A card plot and upload program recorder.

A 160-column dot matrix printer, needing no interface for Atari computers, costing at a claimed \$149.95 (including per second).

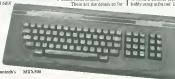
A laser-quality printer.

A CP/M 2.2 module — the operating system used for much business software — which also adds 64K of RAM and 160-column matrix output.

A 5 1/4" floppy disk drive.

A touch tablet with built-in pen for cursor drawing on screen.

A numeric control joystick, probably using ultra red in America.



Minemarch's MTA500

## SPECIAL REPORT

radio is silent, but regularities forced this to the UK.

A "touch-tell" controller with two fire buttons — similar to arcade machines —

A panel-type joystick with fire button.

An internal processor line for memory expansion and future peripherals.

Atari (UK), Atari House, Railway Avenue, Slough, Berks SL3 5HQ.

### Adler's Identity crisis

In the upper price bracket is the £490 Alphamarc PC from Triumph Adler, the guys West German company well known for its typewriters.

It is the company's first venture into personal computers, although it has been supplying business machines for some years.

The Alphamarc PC, using a Z80 microprocessor, has 64K of RAM, 32K of ROM — including a 32K BASIC — a typewriter-style keyboard with an function keys and a slot for cartridges, including an extra 64K of RAM. It can display eight foreground and eight background colours on screen.

Options include RS-232 and Centronics-type for printers, black and white TV, RGB and monitor and floppy drive — a drive for discs is available.

It uses the CP/M operating system, on the existing range of about 500-plus programs, mainly for business, would be available, such marketing manager John Kennedy.

He said: "We are confused because everyone wants to win a People who have got similar machines want to get to something which is more powerful and a lot of companies must be in. There is a big demand for a standard 64K CP/M computer."

"I would imagine that the Commodore II will come under a major threat."

The Alphamarc, due to go on sale in October, would have a range of 40 programs — half educational and half games — available from day one.

Triumph Adler, 37 Garsell Road, London EC4M 7AP.

### Made in Hong Kong

Two low-cost computers will soon be reaching the shelves from

Hong Kong — the Laser 200 and the C-6445.15.

The Laser is aimed at the newcomer to computing and, at £29.95, is claimed to be the world's lowest priced colour computer.

It has 45 rubber-like keys, 4K of RAM — expandable to 48K — and Microsoft BASIC as the 16K ROM. It has made a list of 32 colours by 16 coin with scan screen graphics resolution of 320 by 240. Eight colours are available and there is a single channel sound processor.

And, like the Spectrum, it has single keyboard entry.

Computers for All, the UK distributor, says a range of software will be available starting in July, along with a printer priced at £149.95 using 40-line rolls of plain paper and ballpoint pens, similar to the model marketed by other companies.

Also due is HK RAM pack at £29.95, romdisk, £19.95 a pair, Commodore printer interface, £39.95, tape pen, £19.95, 64K RAM pack, £29.95.

PORTH and another

BASIC are promised for August at £3.99 an cassette.

The COMX 15 includes a built-in joystick to the left of the keyboard in its price of £119.95. The 15 keys are similar to those on the Tandy Colour Computer.

Unlike the Laser, which uses the popular Z80A processor, the COMX has the less well-known 7802.

Although it offers 64K of RAM — hence the name — 16, is used to handle the screen, leaving 32K of user RAM, and 64K of ROM.

The COMX comes with 18 programs on a two-volume tape and there are no other user working on a plug-in printer interface.

■ The Laser 200 has a colour, the Zeta, which has 32K of RAM and a recommended price of £59. It is being distributed by a different company, although it is made by the same Hong Kong firm, Video Technology. With the development of an earlier computer called the V2000. Computers for All, 32 North Street, Stamford, Essex.



The COMX 15 shown off by Joanne Cox, 27

## You could be on our pages

We welcome program articles and tips from our readers.

PROGRAMS should, if possible, be computer printed to a width of 66 characters (use a nine ribbon and/or set on cassette). Check carefully that they are bug-free. Include details of what your program does, how it works, variables you have used and hints on conversion.

ARTICLES on using home computers should be no longer than 2,000 words. Don't worry about your writing ability — just try to keep to the style in WCL. Articles about likely to be published will help our readers make better use of their records by giving useful ideas, possibly with programming examples. We will convert any sketched illustrations into finished artwork.

TIPS are short articles, and brief programming routines which we can put together with others. Your hints can aid other computer users.

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**"IT LOOKS NICE BUT WHAT  
THE HELL CAN I DO WITH IT?"**

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TABLE 1. *Summary of the 1996-1997 season of the 1000-hour program*

[illegible]

The above caption may be used in the text of the report as follows:

[illegible]

FIGURE 1. *Mean (SD) serum concentrations of 25(OH)D<sub>3</sub> in the elderly (n = 100) and young (n = 100) groups.*

1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 2037, 2038, 2039, 2040, 2041, 2042, 2043, 2044, 2045, 2046, 2047, 2048, 2049, 2050, 2051, 2052, 2053, 2054, 2055, 2056, 2057, 2058, 2059, 2060, 2061, 2062, 2063, 2064, 2065, 2066, 2067, 2068, 2069, 2070, 2071, 2072, 2073, 2074, 2075, 2076, 2077, 2078, 2079, 2080, 2081, 2082, 2083, 2084, 2085, 2086, 2087, 2088, 2089, 2090, 2091, 2092, 2093, 2094, 2095, 2096, 2097, 2098, 2099, 2100, 2101, 2102, 2103, 2104, 2105, 2106, 2107, 2108, 2109, 2110, 2111, 2112, 2113, 2114, 2115, 2116, 2117, 2118, 2119, 2120, 2121, 2122, 2123, 2124, 2125, 2126, 2127, 2128, 2129, 2130, 2131, 2132, 2133, 2134, 2135, 2136, 2137, 2138, 2139, 2140, 2141, 2142, 2143, 2144, 2145, 2146, 2147, 2148, 2149, 2150, 2151, 2152, 2153, 2154, 2155, 2156, 2157, 2158, 2159, 2160, 2161, 2162, 2163, 2164, 2165, 2166, 2167, 2168, 2169, 2170, 2171, 2172, 2173, 2174, 2175, 2176, 2177, 2178, 2179, 2180, 2181, 2182, 2183, 2184, 2185, 2186, 2187, 2188, 2189, 2190, 2191, 2192, 2193, 2194, 2195, 2196, 2197, 2198, 2199, 2200, 2201, 2202, 2203, 2204, 2205, 2206, 2207, 2208, 2209, 2210, 2211, 2212, 2213, 2214, 2215, 2216, 2217, 2218, 2219, 2220, 2221, 2222, 2223, 2224, 2225, 2226, 2227, 2228, 2229, 2230, 2231, 2232, 2233, 2234, 2235, 2236, 2237, 2238, 2239, 2240, 2241, 2242, 2243, 2244, 2245, 2246, 2247, 2248, 2249, 2250, 2251, 2252, 2253, 2254, 2255, 2256, 2257, 2258, 2259, 2260, 2261, 2262, 2263, 2264, 2265, 2266, 2267, 2268, 2269, 2270, 2271, 2272, 2273, 2274, 2275, 2276, 2277, 2278, 2279, 2280, 2281, 2282, 2283, 2284, 2285, 2286, 2287, 2288, 2289, 2290, 2291, 2292, 2293, 2294, 2295, 2296, 2297, 2298, 2299, 2300, 2301, 2302, 2303, 2304, 2305, 2306, 2307, 2308, 2309, 2310, 2311, 2312, 2313, 2314, 2315, 2316, 2317, 2318, 2319, 2320, 2321, 2322, 2323, 2324, 2325, 2326, 2327, 2328, 2329, 2330, 2331, 2332, 2333, 2334, 2335, 2336, 2337, 2338, 2339, 2340, 2341, 2342, 2343, 2344, 2345, 2346, 2347, 2348, 2349, 2350, 2351, 2352, 2353, 2354, 2355, 2356, 2357, 2358, 2359, 2360, 2361, 2362, 2363, 2364, 2365, 2366, 2367, 2368, 2369, 2370, 2371, 2372, 2373, 2374, 2375, 2376, 2377, 2378, 2379, 2380, 2381, 2382, 2383, 2384, 2385, 2386, 2387, 2388, 2389, 2390, 2391, 2392, 2393, 2394, 2395, 2396, 2397, 2398, 2399, 2400, 2401, 2402, 2403, 2404, 2405, 2406, 2407, 2408, 2409, 2410, 2411, 2412, 2413, 2414, 2415, 2416, 2417, 2418, 2419, 2420, 2421, 2422, 2423, 2424, 2425, 2426, 2427, 2428, 2429, 2430, 2431, 2432, 2433, 2434, 2435, 2436, 2437, 2438, 2439, 2440, 2441, 2442, 2443, 2444, 2445, 2446, 2447, 2448, 2449, 2450, 2451, 2452, 2453, 2454, 2455, 2456, 2457, 2458, 2459, 2460, 2461, 2462, 2463, 2464, 2465, 2466, 2467, 2468, 2469, 2470, 2471, 2472, 2473, 2474, 2475, 2476, 2477, 2478, 2479, 2480, 2481, 2482, 2483, 2484, 2485, 2486, 2487, 2488, 2489, 2490, 2491, 2492, 2493, 2494, 2495, 2496, 2497, 2498, 2499, 2500, 2501, 2502, 2503, 2504, 2505, 2506, 2507, 2508, 2509, 2510, 2511, 2512, 2513, 2514, 2515, 2516, 2517, 2518, 2519, 2520, 2521, 2522, 2523, 2524, 2525, 2526, 2527, 2528, 2529, 2530, 2531, 2532, 2533, 2534, 2535, 2536, 2537, 2538, 2539, 2540, 2541, 2542, 2543, 2544, 2545, 2546, 2547, 2548, 2549, 2550, 2551, 2552, 2553, 2554, 2555, 2556, 2557, 2558, 2559, 2560, 2561, 2562, 2563, 2564, 2565, 2566, 2567, 2568, 2569, 2570, 2571, 2572, 2573, 2574, 2575, 2576, 2577, 2578, 2579, 2580, 2581, 2582, 2583, 2584, 2585, 2586, 2587, 2588, 2589, 2590, 2591, 2592, 2593, 2594, 2595, 2596, 2597, 2598, 2599, 2600, 2601, 2602, 2603, 2604, 2605, 2606, 2607, 2608, 2609, 2610, 2611, 2612, 2613, 2614, 2615, 2616, 2617, 2618, 2619, 2620, 2621, 2622, 2623, 2624, 2625, 2626, 2627, 2628, 2629, 2630, 2631, 2632, 2633, 2634, 2635, 2636, 2637, 2638, 2639, 2640, 2641, 2642, 2643, 2644, 2645, 2646, 2647, 2648, 2649, 2650, 2651, 2652, 2653, 2654, 2655, 2656, 2657, 2658, 2659, 2660, 2661, 2662, 2663, 2664, 2665, 2666, 2667, 2668, 2669, 2670, 2671, 2672, 2673, 2674, 2675, 2676, 2677, 2678, 2679, 26



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# How's your aim? It could save your life

This game gives the word bomber the meaning it had during World War Two. You must use your bomb-aiming skills to destroy the city before your aircraft loses power and crashes into the high-rise buildings.

The program is devised to maintain the difficulty in each run as successfully as possible.

The score rises from damage to the next until the inevitable crash occurs to the aircraft way out of fuel before it has released enough bombs to land.

## What is conversion

This program should run as it is on the Tandy Color Computer, but when converting to other formats the following points must be taken into account.

•The Dragon has the ability to have two graphics screens and a text screen, all set up as the same size.

•The text screen has a resolution of 30 by 40 and the high resolution is 256 by 128.

•The GET and PUT statements form a powerful alternative to the built-in graphics.

•If GET is the same as PUT, and PRINT is the same as UNPUT.

•The user must be able to play on the high resolution screen — this means you can target above top of the screen picture.

## A version of the classic arcade game, Bomber, written for the Dragon by Ian Sellman

The only operations required in the basic aim and release mechanism, controlled by the user via

You must play it with friends as Bomber is ideal for competition play.

## How it runs

10 Run as the Dragon. If you have friends, you can change and target to your own screen.

20-250 Run as the Dragon.

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## Main variables

PL00, PL01, PL02, PL03, PL04, PL05, PL06, PL07, PL08, PL09, PL10, PL11, PL12, PL13, PL14, PL15, PL16, PL17, PL18, PL19, PL20, PL21, PL22, PL23, PL24, PL25, PL26, PL27, PL28, PL29, PL30, PL31, PL32, PL33, PL34, PL35, PL36, PL37, PL38, PL39, PL40, PL41, PL42, PL43, PL44, PL45, PL46, PL47, PL48, PL49, PL50, PL51, PL52, PL53, PL54, PL55, PL56, PL57, PL58, PL59, PL60, PL61, PL62, PL63, PL64, PL65, PL66, PL67, PL68, PL69, PL70, PL71, PL72, PL73, PL74, PL75, PL76, PL77, PL78, PL79, PL80, PL81, PL82, PL83, PL84, PL85, PL86, PL87, PL88, PL89, PL90, PL91, PL92, PL93, PL94, PL95, PL96, PL97, PL98, PL99, PL100, PL101, PL102, PL103, PL104, PL105, PL106, PL107, PL108, PL109, PL110, PL111, PL112, PL113, PL114, PL115, PL116, PL117, PL118, PL119, PL120, PL121, PL122, PL123, PL124, PL125, PL126, PL127, PL128, PL129, PL130, PL131, PL132, PL133, PL134, PL135, PL136, PL137, PL138, PL139, PL140, PL141, PL142, PL143, PL144, PL145, PL146, PL147, PL148, PL149, PL150, PL151, PL152, PL153, PL154, PL155, PL156, 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# All systems go... for a look at some action games

discover who came out best when our reviewers tried to out-zap these versions of arcade favourites

## Froggun Commodore £4 £6

Amstrad, 28 Strenuous gardens, Haverly, Norfolk

Amstrad's version of the now famous Frog splashing game makes splendid use of the Commodore's graphics talents. The screen displays a really nice bit of art. You can even see the splash's foot!

Due to the length of the program, it takes a long time to load so it's best to make a copy of the disk before you start. Good

the program is running well, it is so hooked that you'll never get round to the title.

The instructions are basic, and don't tell you that you do it to provide a splash: not an exact game. They say that you get 10 points for money forward, but I never did. My score remained at zero. It is a shame that the 15 or so games worth it eventually got a long time, then I suddenly got the increased 100 points.

graphics  
playability  
graphics  
value for money

★★★★★

100%  
100%  
100%  
100%

## Mushroom Mania 48K Oric £4.50

Amstrad, 4 Strenuous gardens, Haverly, Norfolk

Amstrad's version of 'Congo' is a bit slower and the title is a bit strange. However, it is a very entertaining game for the players.

Due to the Oric's sound and value capabilities was excellent, and a reward of high scores was 100,000 and the best actually was 100,000.

Points are scored for jumping down the spider and the

instructions which are somewhat slow. It is a shame that the game is a bit slow. There are some things to be done.

Basically simple. Mushroom Mania is a bit slow, but it is a good value for money.

graphics  
playability  
graphics  
value for money

★★★★★

100%  
100%  
100%  
100%

## Super Glooper/ Frogs 16K ZX81 £4.95

Amstrad, 2 Strenuous gardens, Haverly, Norfolk

Super Glooper moves around a maze, 'glooper' is a bit slow, and avoiding the maze is a bit slow. It has put up a shield which allows him to destroy them. When our score has been completed, a more difficult one appears.

The controls for this game are powered by my key in general 'blocks' which are

you only position your finger in the key and you can control the

Frogs is of course a frog in the maze. The frog is a bit slow, but it is a bit slow. It has put up a shield which allows him to destroy them. When our score has been completed, a more difficult one appears.

Each only can only be used once per game, so take care. In the final column of the maze, the frog is a bit slow, but it is a bit slow. It has put up a shield which allows him to destroy them.

The best score is 100,000. When our score has been completed, a more difficult one appears.



the best score is 100,000. When our score has been completed, a more difficult one appears.

I enjoyed 'Frogs' much more than 'Super Glooper', but they are both very addictive. If you are not already a fan of the game, it is a bit slow. It has put up a shield which allows him to destroy them.

The best score is 100,000. When our score has been completed, a more difficult one appears.

instructions playability graphics value for money

★★★★★

## Millipede/ Road Runner 16K ZX81 £4.95

Amstrad, 4 Strenuous gardens, Haverly, Norfolk

Two great games of the same name — but with quite different targets.

Of the two, I liked Road Runner best. It is a bit slow, but it is a bit slow. It has put up a shield which allows him to destroy them. When our score has been completed, a more difficult one appears.

and will put himself up and move to the other direction. The better — but it is a bit slow. It has put up a shield which allows him to destroy them.

Millipede is a bit slow, but it is a bit slow. It has put up a shield which allows him to destroy them. When our score has been completed, a more difficult one appears.

The best score is 100,000. When our score has been completed, a more difficult one appears.

instructions playability graphics value for money

★★★★★

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**John Menzies**

# A NEW SERIES FOR FIRST TIME USERS

These titles are the latest in a new series of books which introduce newcomers to the most widely used micros in the marketplace.

The "Learning to use" series of books assume absolutely no knowledge about computers and the reader is shown even the most fundamental operations such as "switching on" and "loading a program". The books lead the reader through simple programming and then onto graphics, with several programs which show how to achieve pictures and even animation.

The user-friendly approach is consistent throughout the text — not only are program listings clearly shown, but in many cases, a photograph is included to show what the program looks like when actually loaded and run!

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# It's all new. What we found at the Computer Fair

Stacey Fenton and Richard Chesham, two 21-year-olds who set up C-Tech after university, traveled Rocker Rader, a Spectrum sport game selling at £2.95. It was written over four months by student Nigel Alderson, 17, and Miss Fenton said: "It should overtake *Arkanoid* and *Pentastar* — the graphics are far better than *Arkanoid*."

In about a fortnight C-Tech is bringing out another new game, *Knight's Blunder*, priced at £4.95 and also for the Spectrum, in which a character has to travel at night before monsters catch up with him. The author is another student, David Bryant, 19, who is studying computer science.

Rader had two new £9.95 adventures for the BBC micro. They are *The Ring of Fate* and *Kingdom of Zor* — both help guide the player for players who are stumped.

Needham is a man who wrote their own software and have got a debugger at £24.95 and a printer screen dump program, costing £14.95, from Katus.

Primary school headmaster Gordon Aikow, 31, has written an educational game program for the BBC, ZX81, for children of five years and over — £2.95 is making them at £1.95 each, £2 and £3 at £4.95 each two programs on each tape. Each of the cartoon — new for the older age group — use the BBC technique to load on tape that is suitable.

MS also brought out three cartoons, each with programs at £4.95 also for the BBC, ZX81 and then at £6.95 each for the Super Ace with £14.95 each.

Shedden showed the new Dragon version of *no-Crossing* on Broad-way game.

Imagine give a free public show at Jumping Jack, a £5.95 game for the Spectrum from Albert Bell, a 26-year-old who made-up. Jack tries to climb a multi-story building, facing

**In another show report, Paul Liptrot tells you what you may have missed at the Earls Court Computer Fair**



Jumping Jack author Albert Bell with son and helper Stuart, 18 — This game is new with better graphics

hazards like an octopus, train and an axe. His 16½ son Stuart, 16, drew the hazards — and gets a mention on every cassette.

Rader is planning to release two games each for the Lynx, ZX81, Dragon and Spectrum in about a month. And soon on there will be tapes for the Commodore and VIC-20.

Space Shards, written by a graduate NAA developer, is among a batch of Dragon programs due out from Marsdale on Friday. They are all US imports except one, the company's first from a British writer. Steve Bell has written a main game called *Chalkies* from Walslow.

Theodore and Fagan, Golf and Motors Grand Prix, all at £8, a four-word sound system called *The Computer*, £15, and *Tide Taker*, £25, an educational database to more sports questions. More are due at September's PCW show.

As promised at the Commodore show, Rabbit brought out Spectrum versions of six of its Commodore 64 and VIC-20 games — *Escape MCF*, *Quacker*, *Phantasm*, *Cosmoquest*, *Race Fan* and *Prolog*. Sales boss John Wilson said the firm was aiming for a range of 20 for each of the three computers.

*Join a World War One* serial battle with *Daylight*, at £3.95 for the BBC micro. It is the first of a dozen games from add-on suppliers Opus, said partner Rowland How. *Daylight* was written by Andrew Hiding — or "Hogger", as he calls himself on the cassette.

Five games for the Spectrum, VIC-20 and BBC micro are due from Quackies in about a fortnight. And in September there will be at least 10 more, said sales boss Rod Chouin. Mystery usually he added: "There are some brand new ideas which we can't discuss at present."

## SPECIAL REPORT

Kobus sales director Peter Ruppel said his company was deciding on which Commodore 64 game cartridges to import from Sweden. A decision for the 60 models, and possibly cartridge, was being brought in from Canada.

Dragon specialists Pomeroy showed us disc systems plus four new titles: HYPNOS, at \$7.99 or \$9.99 for the disc version, which dumps a hi-res screen to the printer; Encoder 64, an assembler/disassembler/editor at \$29.99, or \$39.99 for cartridge, or \$34.99 for disc; Scribble, a \$24.95 cassette to give lower cost and other features; and Graphix Tutor, at \$9.95 or \$11.95 for disc, which adds features like 31 new BASIC words and 10 other routines.

New Disc, Spectrum, BBC and TI 99/4A tapes were released by PMS, all costing \$4.99. They are, for the One, Worm and Machine Code Monitor; for the BBC mono, a version of the Dragon mail game Whosap; Freddy and Macintosh, two stories for the Spectrum; and for the TI, City Wars/Tenac.

Coming soon: three games for the One, two for the BBC and one for the TI 99/4A while it's traded BASIC.

Salomander has licensed Christmas — written for the VIC-20 by Jeff Minton of Linnwood — and converted it for the Dragon. It costs \$7.99, needs a joystick and houses Earth AD 2000, a 16-megabyte file with the house race's only hope resting on an orbating power station. Christmas is a spacey story with a mission to protect the station from evil deeds.

Salomander's two other releases are Franklin's Tomb, a single player adventure at \$9.99, and Dragon, costing \$7.99, both for the Dragon.

A new low-cost printer is due out in September from the company — at about \$150 cheaper than similar models. Managing director David Hinkley and subeditor Peter Biscardi are just back from Taiwan, Japan and Hong Kong and mentioned two printers.

And the one they are most likely to put on sale will be a version of the four-column printer/plotter — which can say full-screen text on 4 1/2 in. paper rolls — at present being marketed



Robot partner Heather Kismet, 20 — with cuddle mascot

by Tandy, One, Micro Peripherals and, most recently, Commodore. His Hinkley reckons he can sell it for \$99.95, including an interface for the Spectrum, because of his lower costs.

He Kismet showed two new Spectrum games, Immortal at \$4.99 and Muzak at \$3.99 for the 44K model, bringing its total to 15. And in the last couple of months, said Mr. Hinkley, the firm would be adding tapes for the Atari, Dragon, Commodore 64, VIC-20 and BBC to its Spectrum and ZX81 ranges.

A new add-on board for the VIC-20, costing £29.99 from Slack, gives an additional 16K of RAM plus sockets for two 4K EPROMs. The company also had a light pen for the BBC micro, costing £29.15 with a cassette game.

New add-on memory packs were shown by Di Memory, best known for its ZX81 RAM packs. They are 16K for the VIC-20 — available for 1K 5K or 16K expansion — 44K and 118K RAM packs for the Japan AC-mating designed RAM packs for the

Z801 to 44K, new switchable, and 118K versions.

Commodore will never be the same after Tim, a new game at £3.99 for the Spectrum and Commodore 64, by Jeff Jo's. Complete with sound, a team chase around the screen collecting passengers — and trying to avoid the killer train. A VIC-20 version is due out in about a fortnight.

ARP's batch of new games was One Printer at \$6.99 — a version of its BBC and Spectrum cassette — Sea Defenders, a four-player action game for the Dragon, also costing \$6.99, and four for the BBC model at \$4.99 each, in which you catch "Neobots" with an anti-matter spring, blowout a graphics-motion game, and two art adventures, The Shinning Professor and Horror Castle.

Six games for just £1.50 each being offered by Canall, which has packaged them into a comprehensive for the BBC ZX81. More games, mostly for the Spectrum, are to be launched by Canall in September or October. At the

same Canall held the final of its Volcano Dragon competition, to win a holiday for two in Florida, based on an £3 advance for the BBC ZX81, BBC Spectrum and Dragon.

Turn your BBC ZX81 into a professional class word processor, said Data-Ness, which launched its own's X-Word in a 148K ROM package costing £39.95. It plugs in to offer many of the usual word processing features, including the system of upper and lower case output through an RS 232C interface or the ZX Printer.

Amey showed 16-Time Trek, at £1.99 for the Commodore 64, along with Miss Kong, a costing £1.99, a new version of its King Kong, or written to run on the suspended VIC-20.

A new deal for BBC Spectrum owners will be offered soon by Spectrum Games, and chairman David Ward. He believes they have been disappointed at games written for other models, so his firm's target is being re-written to make use of the 44K memory — but with the BBC version on the other side.

Spectrum brought out five new titles, all at £1.99, to the store: King, Armageddon and Mame for the Spectrum and Blackie Command and Comic Interlude for the VIC-20. Don soon are these games stick for the One, Dragon and Commodore 64.

Mike Meek, managing director of Minkogon, said his company has looking back at new releases since late August, to catch the Christmas sales. It would then have no new games, mainly for the Spectrum.

A bumper bundle of nine new tapes — five for the Spectrum and four for the BBC BBC mono — was launched by BugByte. One of them is General Election, for the Spectrum at \$4.99. Sales boss John Phillips explained: "It says that we couldn't get it out in time, the election will be called early like it is down if you are disappointed with the result — which I hope most of the population will be — but your chance to the something about it."

BugByte's other four new Spectrum games all cost £3.99. They are an underground world Agony, Sps, described as a combination of a maze game and

## SPECIAL REPORT

Frigger, Pool and Mario Maze. Mr Phillips described the last one like this: "It's a 14 track and I think it's going to be the best Spectrum game. It's almost certainly complete."

The BBC tapes are Objective and Sea Lord, two arcade games at £7.99, and Old Father Time and Graphics Pack, both at £3.99.

Acasid brought out a game with a futuristic-sounding name — Rider of the Lost Moon — along with Grid Run/ Position, both priced at £3.99 for the 48K Spectrum.

Empire is a one-player strategy game for the Dragon at £6.95. Your task is to destroy the evil Dragon empire. Rhade, which is marketing it, says the automatic playing feature allows you to "sit back and watch the world being overthrown."

Bandy, all the way from the Isle of Harna, brought out new games for four computers. For the Dragon, Scanner 33, costing £4.49, is an arcade-shooting sci-fi story of the future. Spacewalk is a "fun game" for £3.95, and

Adam Oddysey (the spellings correctly is a six-part adventure, with the first two parts as a £9.95 cassette.

For the TI-99/4A, Underground Adventure is £8.45 and two of £6.99 — E-84, a chess-type game, and Alone at Sea, in which you escape from a sinking ship. For the 48K Spectrum, Master Code and Mystery Manor, both costing £6.99. And three for the ZX81, all priced at £3.95: Bio-Hivemans, Spelling Tutor and Treasure Island.

Horobank is a new service from the Nottingham Building Society which uses a computer to offer "teleshopping", a magazine, all of Friend's pages and building society transactions — as long as you have an FBS account.

New games brought out as advance game called Kari at £6 for the 48K Spectrum.

GB Software brought out a version of the LEXA language, priced at £9.95 for the 48K Spectrum, which has easy-to-use graphics and is popular in education because of its simplicity.

### Where to find them

C-Tek Software, 184 Market Street, Hyde, Cheshire.  
Kismet City Systems, Unit 3, Garrison Square West, Chesham, Bucks HP8 1EP.

Alpha Computers, 11 York Road, Manchester B13 2LQ.

JRS Software, Chesham Building, Watney Street, Cambridge CB2 1LR.

Sandwich, Hobhouse Court, 31 Watney Street, London WC2 1NF.

Imaginer Software, Marston Building, Watney Street, Liverpool L3 9PH.

Acasid Software, 172 Argyle Avenue, Slough, Berks.

Microind, 41 York Road, 31 Ainslie, Cornwall PL25 3JZ.

Robbie Software, 380 Station Road, Norton, Middlesex UB8 3BA.

Opti Supply, 137 Colchester Road, London SE23 0EE.

Quadrilla, 80 Northam Road, Southampton SO3 8PB.

Adams, Unit 8, 1-7 Bromfield Road, London W11.

Former Publications, 208 Cranston Road, Aylesbury, London MK20 7YJ.

F450, 313/315 Market Street, Macc, Cheshire SK14 1BP.

Adams Software, 17 Hatfield Road, Brighton.

### In order of appearance

Stock Computer Services, 200-202 Derby Road, South Liverpool L10 6LH.

Daisyway Electronics, Downway House, Epsom Road, Ashford, Surrey.

Soft Jack Software, Business Centre, Clapham Road, Bournemouth, Bournemouth.

44F Software, 130 Hyde Road, Gorton, Manchester M7H 2SD.

Comet Software, 4 Stanton Road, Slough, Berks SL2 1NF.

Data-Access, 44 Division Street, London NW1.

Amalg Software, 36 Bournemouth Garden, Heston, Surrey.

Spectrum Games, Ground Floor, 10th Building, Abbey Street, Manchester.

Morgans, 24 Azor Crescent, Bournemouth, Berks.

Big-Bro, Mulberry House, Canning Place, Liverpool L7 1SB.

Archie, Technology House, 21 Churchfield Road, Gorton, Road M8H 0EG.

Shards Software, 10 Park Park Court, Five Ways, Birmingham, Essex CM4 4HL.

Amalg Software, Liverpool, 10th of Heston M44 3TX.

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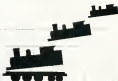
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## Man & Monsters £6.00

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Perhaps the inflated price reflects a touch of exploitation: the sound at the beginning of the game and when the monsters attack is enough to give anyone a headache.

You act as a multi-armed building and your task is to push the floors, while monsters crash you down. If you complete the painting without being caught then you can dig holes and put your pursuers to sleep, death. But be careful not to fall into your

own traps or tumble off ladders or edges of levels.

You have a long supply of oxygen tanks (but this fact you — if you run out. A fresh supply of oxygen is given to each of your three lives. Automatic level control movements and a small I, while your pick-ups to left or right.

There is a long delay between the game segments, and the colour contrast on the rapid instruction screen and the score could be better. This is quite an amusing game, if a little slow.

interactions 90%  
playability 80%  
graphics 90%  
value for money 80%

★ ★ ★

C.E.

## Where to find arcade action on the TI-99/4A

This week our reviewers look at some arcade favourites adapted for the TI-99/4A.

## Bodger Extended Basic £4.50

Firefly, 48 Down Street, London W1H 1PH

You'd better check up on the Green Cross code before attempting Bodger — an adaptation of Frogger. Your objective is to reach home, but you only have three lives with which to do it.

To get home you must cross five lots of traffic, dodge the giant rollers, however, do not taking care to avoid the irretrievable, speedboats and, finally, the caterpillar. You have four homes to occupy, and each home may only be entered once.

If you do manage to take find your way to all four homes there's no saving back. You're pleased with yourself, for the game starts all over again. This time the post is even faster!

Movements are controlled from the keyboard — a joystick control isn't provided as an optional extra.

All the graphics are superb. Even the scrolling help and instructions, literally, Bodger's full use has been made of the space capability of Extended Basic to provide action every bit as exciting and addictive as the arcade original.

interactions 90%  
playability 100%  
graphics 100%  
value for money 100%

★ ★ ★ ★ ★

J.W.

## Wankapillar £6.00

PE Software from Starline Software, 10 Albion Road, Stockport, Cheshire SK6 1AA

You are the Wankapillar, trying to escape from a series of masses that a few new turns make the game a little more like the other major games on the market.

You have one mode a square escape is to blow yourself out with a time bomb. But don't let yourself get so well.

As you travel down the screen, you keep appearing at your body behind. Collide with one of them on the wall of the mine, and you're in dead Wankapillar. At least there are

any hosts or other means to solve the lot.

You get a score for getting through each part of the mine of first being caught in various locations. Reach the end of the mine and you find yourself in the centre of a second mine, capital, and you might find your name in the high score table.

You control the direction keys to move around or change them in the days of your choice at the beginning of the game.

interactions 90%  
playability 80%  
graphics 90%  
value for money 80%

★ ★ ★

C.E.

## North Sea £3.50

Christmas Computing, 4 Farnham Close, Walsley, Here

An arcade game in which you task is to take supply ships moving from left to right across the top of the screen.

To do this, you must first improve your aim using the ship before firing. The computer keeps count of how many ships you sink and how many ships

Before the game is written in TI Basic, play is very smooth — for example, all movements stop when your bullet moves up the screen.

The impression of the programming language mode

that the game inevitably lacks excitement, though it is well written and well code-tipped.

interactions 90%  
playability 90%  
graphics 90%  
value for money 90%

★ ★

interactions 90%  
playability 90%  
graphics 90%  
value for money 90%

★ ★



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# Will Rabbit run and run?

Rabbit is one of the better-known names in software for the VIC-30, and the company has been around since the VIC's arrival in the UK. But it started as just a sideline for Crown Computers, a computer shop specializing in business microcomputers.

One of the Crown's employees wrote software, and the company thought it might be a good idea to try and sell a few games by mail order, under the Rabbit label. Ads were placed in the computer press; the summer of 1981.

The orders started to come in, and then, just before Christmas that year, Rabbit really started to take off, taking with it a surge of interest in the VIC. That Christmas Eve, Crown Computers had a consignment of

**Rabbit is a veteran company by the standards of the home computer software market. How did it first spot the potential in programs, and where does it go from here? Candice Goodwin reports**



VICs and, according to Terry Green, "we had people queuing up outside the door. We did £15,000 worth of business in two hours."

From being a sideline, Rabbit has now become Crown. The success of the mail-order business resulted in a decision to go into retail outlets, and it was then that the programs were drawn up in the distinctive red packs that many VIC owners will know and love. But Rabbit had won't wait when direction in software would take.

If you look closely at a Rabbit retail display you'll see that there are actually two different rabbits — a "home version" rabbit on the cassette boxes and a custom rabbit on the manual. The

custom rabbit was designed in the days when the company was trading its own business and games software, and was a logo that would do for sales. But the custom bunny reflects its decision to go for games.

Rabbit now has a large range of action games for the VIC-30 and some for the Commodore 64. It has just brought out 14 new games, at a low house price of £7.99. And by the time you read this, it will probably have launched some Spectrum programs too.

The programs are sold mainly through retail outlets. Carrys, Lloyds "and all good dealers — a good dealer is our opinion being one that stocks Rabbit software."

It also has distribution in

Scots of the House of Rabbit. From left to right, top row: Lorraine Hagen, Terry Green, Tania Rafter. Third Row: Karen Pavey, Lisa Haystack, and Stuart Baines.

Norway, Sweden, Denmark, Canada, Australia, Ireland, USA and Greece.

The company is sticking to arcade-type games. "Because they sell." But a doesn't believe in sticking to the old formulas. "You have to bring new different sorts of the new — all our games are completely different."

Rabbit did once try its hand at adventure games, but the experience was not a success. Not because the games didn't sell. Terry recalled "we kept getting phone calls from people who'd

got stuck at some stage of the game and wanted us to get them out. It started to get a bit out of hand." The adventure games are still around, but the company tries to keep their customer very quiet.

Rabbit's games aren't usually written in-house. To promote that Stuart Baines' specialization of his own programming. The final touches to individual programs, adding in title pages and joystick control.

Rabbit went in order of custom duplicating, with 40 tape decks connected up to one VIC. Now it uses a duplicating company. But plans are to program in and set up its own data duplicating facility, in Speke, Liverpool. The company has already bought a winding machine, a mastering unit and a duplicating machine, which are sitting in the office at 2000a and Road, Harnley, waiting for the money to start.

With the aid of its new duplicating facility, Rabbit will presumably be able to run even faster. Which means one — where did it get that name?

Apparently, it came from Rabbit's former member Lorraine's toy rabbit Roland. But there's some dispute between the two directors over whose idea it was. Said Terry "Michael argued it was his idea. Alan says it was his idea. They both say it was their best idea ever."

Whichever the name came from, it's certainly a name that sticks in your mind. So it's only fair that by way of recognition, Roland should now be the company's mascot.









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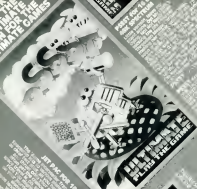
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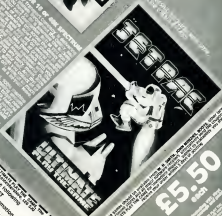
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